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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/815,401	03/31/2004	Pierre Guillaume Raverdy	80398P594	7970

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EXAMINER

AHMED, SALMAN

ART UNIT	PAPER NUMBER
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2419

MAIL DATE	DELIVERY MODE
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01/02/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/815,401	Applicant(s) RAVERDY ET AL.	
	Examiner SALMAN AHMED	Art Unit 2419	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10/20/2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 3/31/2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 1-40 are pending.

Claims 1-40 are rejected.

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “the network state information including at least one of network configuration, network status and network history” and “interference list” must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

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the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 25-36 are rejected under 35 U.S.C. 101.

Claim 25 state "machine-accessible storage medium". Specification paragraph 0108 states : "The term hardware generally refers to an element having a physical structure such as electronic, electromagnetic, optical, electro-optical, mechanical, electro-mechanical parts, etc. The term firmware generally refers to a logical structure, a method, a procedure, a program, a routine, a process, an algorithm, a formula, a function, an expression, etc that is implemented or embodied in a hardware structure (Examiner notes: embodied in electromagnetic, optical, electro-optical?) (e.g., flash memory, ROM, EROM). Examples of firmware may include microcode, writable control store, microprogrammed structure. The "processor readable or accessible medium" or "machine readable or accessible medium" may include any medium that can store, transmit, or transfer information. Examples of the processor readable or machine accessible medium include an electronic circuit, a semiconductor memory device, a read only memory (ROM), a flash memory, an erasable ROM (EROM), a floppy diskette, a compact disk (CD) ROM, an optical disk, a hard disk, a fiber optic medium, a radio frequency (RF) link, etc. The computer data signal may include any signal that can

propagate over a transmission medium such as electronic network channels, optical fibers, air, electromagnetic, RF links, etc.

Claims 25-36 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Regarding Claims 25-36, the claims are directed to a "machine-accessible storage medium" (descriptive material) per se as recited and is considered non-statutory subject matter. (See MPEP 2106.IV.B.1(a)). Machine-readable instructions stored in data structures, program modules, or other data in a modulated data signal such as a carrier wave or other transport mechanism are descriptive material per se and are not statutory because they are not capable of causing functional change in the computer. See, e.g., Warmerdam, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory). Such claimed Machine-readable instructions, data structures, program modules, or other data in a modulated data signal such as a carrier wave or other transport mechanism do not define any structural and functional interrelationships between the Machine-readable instructions, data structures, program modules, or other data in a modulated data signal such as a carrier wave or other transport mechanism and other claimed aspects of the invention, which permit the Machine-readable instructions, data structures, program modules, or other data in a modulated data signal such as a carrier wave or other transport mechanism's functionality to be realized.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

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The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 25-36 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

4. Claim 25 states "machine-accessible storage medium" which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 25-36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 25-36 are rejected under 35 USC 112 2nd. Claim 25 claims "machine-accessible storage medium including data, when accessed by a machine, causes the machine to perform operation" is vague and indefinite because it is unclear how a medium can store data when medium is defined also as electromagnetic, optical, electro-optical, a fiber optic medium, a radio frequency (RF) link, signal may include any signal that can propagate over a transmission medium such as electronic network channels, optical fibers, air, electromagnetic, RF links, etc. A tangible medium can have

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instructions stored on it, recorded on it, etc, for a computer or machine to read, but it is not clear how propagated signal stores instructions for computer or machine to read, and claims 26-36 are also rejected since they depend from claim 25 and contain the same deficiency.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claim 1, 3-8, and 10-13, 15-20, and 22, 24-25, 27-32, 34 and 36 is rejected under 35 U.S.C. 102(e) as being anticipated by Ayyagari (US20040174829) in view of Andric et al. (US PAT PUB 2004/0018839, hereinafter Andric).

Regarding claims 1, Ayyagari discloses a centralized network organization and topology discovery in ad-hoc network with central controller (see paragraph 5) comprising: a frame module (see paragraph 25 central coordinator(Cco)) to process a frame containing information regarding a local node in a first network (see paragraph 64 Device Class and Activity Indicator), the information including discovery information (Figure 5, Device Class and paragraph 0120) and network state information (see paragraph 64 network state information is not further specified and therefore the term is broadly interpreted and figure 5 Activity indicator which indicates how busy a device is corresponds to network state information. In paragraph 0064, Ayyagari further states Activity Indicator is an optional parameter indicating how busy a device is, in terms of its duty cycle. If a device is not transmitting or receiving data (i.e. if the network connected to the device is transmitting or receiving data) this value is 0), the discovery information being represented in a common description (see paragraph 55 line 1 - 9 and figure 5 and figure 6); • an information module (see paragraph 75-79, topology table) coupled to the frame module to manage the information (see paragraph 75-79 where CCo maintains a topology table); and • a communication module (implicitly CCo comprises a communication module for communicating with other nodes) coupled to the frame module and the information module to manage communication between the local node and a remote node (see paragraph 21 and 75-79 where CCo maintains a topology table of the discovered node lists and topology is being update in paragraph 84, and paragraph 88 where node communicate with CCo is being specified with beacon message) in a second network using the information (see paragraph 21).

Ayyagari does not explicitly teach a communication module and state information including at least one of network configuration, network status and network history.

Andric in the same or similar field of endeavor teaches a communication module (paragraph 0212 and Figure 75) and state information including at least one of network configuration, network status and network history (paragraph 0128).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate in Ayyagari's system/method the communication module and state information including at least one of network configuration, network status and network history as suggested by Andric. The motivation is that (as suggested by Andric, paragraph 0127) such method enables a node to keep up-to-date route information for future routing; thus making the network efficient and reliable. Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces/market place incentives if the variations are predictable to one of ordinary skill in the art.

Regarding claim 3, Ayyagari teaches the frame receiver forwards the received remote frame to the communication module if the received remote frame is related to the network communication (see paragraph 88 beacon message).

Regarding claim 4, Ayyagari teaches the frame receiver forwards (see paragraph 89 line 7-10) the received remote frame to the information module of the local node, to another local node in the first network, or to another remote node if the received remote frame is related to information exchange and meets an acceptance condition (see paragraph 89 admission in the network).

Regarding claim 5, Ayyagari teaches the acceptance condition is based on a forwarding number and propagation parameters (see paragraph 79) including a propagation list (see paragraph 76) and a propagation type (see paragraph 89 slot number of a contention channel), the forwarding number and the propagation type being contained in the frame (see paragraph 89 line 1-5 and paragraph 91 line 3 T_d iscovery_interval).

Regarding claim 6, Ayyagari teaches the information module comprises:

- a collector to collect the information (see paragraph 113);
- a translator coupled to the collector to translate the discovery information into the common description (see figure 6 and paragraph 66 line 10-11);
- a node selector coupled to the collector to determine if the local node participates in the communication based on the network state information of the local node and other network state information from another local node in the first network (see paragraph 70 a new device that has been selected as the CCo); and
- a synchronizer to synchronize the collected information with other information from other local nodes in the first network (see paragraph 55 and 84 update its discovered node list).

Regarding claim 7, Ayyagari teaches the information module further comprises:

- an information table to store entries regarding information extracted from a received remote frame (see paragraph 76 topology table); and
- an information table updater to update the entries (see paragraph 84).

Regarding claim 8, Ayyagari teaches the communication module comprises:

- a usage evaluator to evaluate network usage to determine relative location of the

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second network based on an interference list from the network state information (see paragraph 118 line 3-6 and paragraph 147); • a channel migration evaluator to evaluate a channel allocation layout (see paragraph 118 line 6-11 quality indicator); • a channel change controller to control a channel change based in the channel allocation layout (see paragraph 118 line 8-10); and • a channel changer to change channel of the local node according to a wireless mode used by the node (see paragraph 118 line 8-10 and paragraph 121 line 1).

Regarding claim 10, Ayyagari teaches the discovery information includes information on at least node device (see figure 1 ref20 ref 30), node service (see paragraph 46), and user (see figure 1 ref20 ref 30).

Regarding claim 12, Ayyagari teaches the interference list includes at least a network from which the local node receives a beacon or directly receives a remote frame from the remote node (see paragraph 46).

Regarding claims 13, 15-20, 22 and 24, Ayyagari and Andric disclose all the limitations as discussed in the rejection of apparatus claims 1,3-8, and 10-12 and are therefore method claims 13, 15-20, 22 and 24 are rejected using the same rationales.

Regarding claims 25, 27-32, 34 and 36, Ayyagari teaches a self-organizing ad-hoc communication networks (see paragraph 4 it is inherent devices (nodes) are computerized and is functioned by a set data) and in view of Andric disclose all the limitations as discussed in the rejection of apparatus claims 1,3-8, and 10-12 and are therefore article or manufacture claims 25, 27-32, 34 and 36 are rejected using the same rationales.

Regarding claims 37-40, Ayyagari in view of Andric disclose all the limitations as discussed in the rejection of apparatus claims 1-2, 6, and 8 and are therefore apparatus claims 37-40 are rejected using the same rationales.

9. Claims 2, 9, 14, 21, 26, and 33 rejected under 35 U.S.C. 103(a) as being unpatentable over Ayyagari and Andric as applied to claims 1, 13, 25 and 37 and further in view of Barber et al. (US20050073979).

Regarding claim 2, Ayyagari teaches the frame module comprises: • a frame builder to build the frame containing the information (see paragraphs 57-60 and it is inherent for message to contains information); • a frame transmitter (see paragraph 58) coupled to the frame builder (see paragraphs 57-60 and it is inherent for message to contains information such as allocation frame number, time slot) to transmit the frame (see paragraph 58 a message transmitted by the CCo) to another local node in the first network or the remote node in the second network (see Ayyagari paragraph 54 the node communicates with the CCo directly or through an intermediary node, and registers in the network); • a frame receiver to receive another frame from another local node in the first network (see paragraph 48 a discovery msg message has been received) or to receive a remote frame from the remote node (see paragraph 24 and 88-89); and disclose all the subject matter of the claimed invention with the exception of • a frame poller coupled to the frame transmitter to provide a polling frame requesting for information of the remote node.

In the background of Barber et al. the same or similar fields of endeavor teaches the use of polling interaction (see Barber et al. paragraph 12 and figure 12 and paragraph 103 package up traffic between visitor clients).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the polling and packaging of traffic as taught Barber et al. in the discovery in ad-hoc network with central controller of Ayyagari and Andric in order to increase efficiency of the transmission system. Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces/market place incentives if the variations are predictable to one of ordinary skill in the art.

Regarding claim 9, Ayyagari disclose all the subject matter of the claimed invention with the exception of the channel migration evaluator evaluates an alternate layout based on a relationship between interference and channel distance.

Barber et al. from the same or similar fields of endeavor teaches the use of distance between two radio sources is determinable from signal strength (see Barber et al. paragraph 84), and calculated physical positions of each radio and stats about nearby interference (see Barber et al. paragraph 86).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the determining signal strength, and calculating physical positions of each radio and stats about interference as taught by Barber et al. in the ad-hoc network with central controller of Ayyagari and Andric in order to increase efficiency of the transmission system. Known work in one field of endeavor may prompt variations of

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it for use in either the same field or a different one based on design incentives or other market forces/market place incentives if the variations are predictable to one of ordinary skill in the art.

Regarding claims 14, 21, 26, and 33, Ayyagari, Andric and disclose all the limitations as discussed in the rejection of apparatus claims 2 and 9 and are therefore apparatus claims 14, 21, 26, and 33 are rejected using the same rationales.

9. Claims 11, 23 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ayyagari and Andric as applied to claims 1, 13 and 37 and further in view of Barber et al. (US20050073979).

Regarding claim 11, 23 and 35 Ayyagari and Andric teach the network state information as described above.

Ayyagari and Andric do not explicitly teach network state information including an interference list.

Nanda in the same field of endeavor teaches network state information including an interference list (paragraphs 0010, 0013, 0014, 0065, 0071, 0076, 0079 and 0080).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate in Ayyagari and Andric's system/method the step of network state information including an interference list as suggested by Nanda. The motivation is that such method of providing interference list enables a network to be aware of all of the surrounding topologies and thus, configure various nodes to be operable in a seamless and reliable manner. Known work in one field of endeavor may prompt

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variations of it for use in either the same field or a different one based on design incentives or other market forces/market place incentives if the variations are predictable to one of ordinary skill in the art.

Response to Arguments

1. Applicant's arguments see pages 11-24 of the Remarks section, filed 10/20/2008, with respect to the rejections of the claims have been fully considered and are moot in view of new ground of rejections presented in this office action.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SALMAN AHMED whose telephone number is (571)272-8307. The examiner can normally be reached on 9:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edan Orgad can be reached on (571) 272-7884. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Salman Ahmed/

Examiner, Art Unit 2419